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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,625	11/13/2003	Lawrence J. Karr	50037.0065USD2	2408
27488	7590	08/24/2006	EXAMINER	
MERCHANT & GOULD (MICROSOFT)			NGUYEN, DUC M	
P.O. BOX 2903			ART UNIT	
MINNEAPOLIS, MN 55402-0903			PAPER NUMBER	

2618

DATE MAILED: 08/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/713,625	KARR ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Duc M. Nguyen	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-19 and 44-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-19, 44-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 46 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 46 recites the limitation "the High-Level Data Link Control " in line 1. There is insufficient antecedent basis for this limitation in the claim.

Suggestion : the claim should depend on claim 45, not 44.

### ***Claim Objections***

3. Claim 54 is objected to because of the following informalities: the "transit clock timing" as recited in line 3 of the claim should be changed to "transmit clock timing".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **12-17, 19, 44-45, 47, 50-51, 55** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang et al** (US 5,548,814) in view of **Chadwick** (US 5,168,271).

Regarding claim **12**, **Lorang** discloses a broadcast transmitter (see Fig. 3), comprising:

an input-output controller (72) coupled to a first input interface (82) and to a buffer

memory 78 (see Fig. 3 and col. 6, lines 40-58);

a control processor (72) coupled to said input-output controller and to a second input (84)

interface (see col. 7, lines 1-8) ;

a precision time base coupled to said control processor (inherent component in order to provide clock signals to the processors and/or oscillators for operating the transmitter device);

an encoding engine coupled to said input-output controller, said control processor,

and to a first memory (see col. 7, lines 9-11 noting for the Rx/Tx device and see Fig. 10 regarding baseband processor components of a Rx/Tx device); and

a subcarrier signal generator, coupled to said encoding engine, said control processor, a second memory, and to a subcarrier output (see col. 7, lines 9-11 noting for the Rx/Tx device and see Fig. 10 regarding baseband processor components of the Rx/Tx device).

Here, although **Lorang** is silent with a subcarrier generator, it is noted that since **Lorang** suggests using standard paging FM architecture for the Rx/Tx device's communication mode (see col. 10, lines 53-64), and since the standard paging FM architecture uses FM subcarrier signals for modulation, it is clear that **Lorang** would obviously suggest FM subcarrier signals as disclosed by **Chadwick** (see Fig. 2). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Lorang** to incorporate an encoder and FM subcarrier signals for modulation as taught by **Chadwick**, for utilizing advantages of FM subcarrier communication protocol such as low power transmission.

Regarding claim **13**, **Lorang** discloses the control processor includes at least one of a microprocessor, microcontroller, programmable logic array, programmable gate array, and an ASIC as claimed (see Fig. 10 regarding baseband processor components of the Rx/Tx device).

Regarding claim **14**, it would have been obvious to one skilled in the art at the time the invention was made to modify **Lorang** to utilize field-programmable gate array for the input-output controller, for utilizing advantages of the field-programmable gate array such as low cost, fast turn around (i.e, designs can be placed on an FPGA in typically a few minutes).

Regarding claim **15**, **Lorang** discloses the first input interface further comprises at least one of an RS-422 interface, an RS-232 interface, an IEEE-1394 interface, a USB interface, or an Ethernet interface as claimed (see col. 6, lines 60-61).

Regarding claim **16**, it would have been obvious to one skilled in the art that the Ethernet interface as disclosed by Lorang (see col. 6, lines 60-61) could also be used for the second interface (84) as well, for interfacing to the PSTN/PDN network (see col. 7, lines 4-8).

Regarding claim **17**, since the use of 1-ppm oscillator as a precision time base is well known in the art, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to provide a 1-ppm oscillator for the precision time base as claimed, for utilizing advantages of this standard 1-ppm oscillator such as cost.

Regarding claim **19**, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to utilize field-programmable gate array for the modulator, for utilizing advantages of the field-programmable gate array such as low cost, fast turn around (i.e, designs can be placed on an FPGA in typically a few minutes).

Regarding claim **44**, it is rejected for the same reason as set forth in claim 12 above regarding the FM subcarrier signal generator. In addition, **Lorang** as modified would disclose data source with formatted data (see source PC 48 in Fig. 11 and col. 5, lines 15-21), a mobile device that is configured to receive data in a broadcast mode and a localcast mode (see Fig 11 and col. 12, lines 42-45), and that the FM subcarrier baseband signals is transmitted to the mobile device in accordance with a predetermined schedule (see col. 4, lines 60-62 and col. 5, lines 20-21), such that the mobile device receives the FM subcarrier baseband signals when in the broadcast mode (see Fig 11 and col. 12, lines 42-45).

Regarding claim **45**, it is rejected for the same reason as set forth in claim 44 above. In addition, as admitted by applicant in [0036], a High-Level Data Link Control (HDLC) protocol is a standardized, bit oriented, switched and non-switches protocol, and can be found in ISO standards such as ISO 3309 or ISO 4335. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to utilize a HDLC protocol as claimed, for utilizing advantages of a standardized protocol such as popularity and cost.

Regarding claim **47**, it is rejected for the same reason as set forth in claim 12 above. In addition, **Lorang** as modified would disclose the encoded data corresponds to an output image resulting from the means for encoding hashing (or interleaving) and placing packets within a frame received as the formatted data (see **Chadwick**, Fig. 2 and col. 4, line 51 – col. 5, line 6).

Regarding claim **50**, the claim is interpreted and rejected for the same reason as set forth in claim 48 above. In addition, **Lorang** as modified would disclose commands (i.e, specified time and frequency of the message, see Lorange col. 5, lines 20-21), hashing (or interleaving, see Chadwick, Fig. 2), filtering and amplifying (see Lorange, Fig. 12). As to the claimed limitation regarding the time-diversity stages, it is noted that the use of a transmit diversity is well known in the art (i.e, frequency diversity, space diversity, coded diversity, etc). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to transmit the message with time-diversity stages as claimed, for reducing/minimizing signal reception errors caused by fading.

Regarding claim **51**, the claim is interpreted and rejected for the same reason as set forth in claim 45 above regarding the HDLC protocol.

Regarding claim **55**, the claim is interpreted and rejected for the same reason as set forth in claim 50 above. In addition, **Lorang** as modified would disclose the subcarrier signal generator is further arranged to modulate data corresponding to the output image utilizing quadrature phase shift keying (see Chadwick, Fig. 2 regarding DQPSK modulator 130).

6. Claim **18** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang** in view of **Chadwick** and in view of **Cox** (US 5,732,333).

Regarding claim **18**, **Lorang** as modified would disclose the subcarrier signal generator is further comprised of a modulator (see modulator 130 in Fig. 2 of Chadwick), and an output filter (see filter 336 in Fig. 10). Although **Lorang** as modified is silent on a digital-analog converter, it is noted that since the modulator data are digital data, it is clear that a digital-analog converter would be needed in order generate a carrier analog signal for RF transmission as disclosed by **Cox** (see D/A 112 in Figs. 1 and 2). Therefore, the claimed imitation regarding a digital-analog converter is made obvious by **Lorang** and **Cox**, in order to generate a carrier analog signal.

7. Claim **46** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang** in view of **Chadwick** and in view of **Campana** (US 6,567,397).



Regarding claim **46**, it is rejected for the same reason as set forth in claim 44 above. In addition, since the use of a wildcard value in the address field to enable deliver of data to a group of receivers is well known in the art as disclosed by **Campana** (see col. 2, lines 60-61), it would have been obvious to one skilled in the art at the time the invention was made to modify **Lorang** to create an address field corresponding to the formatted data, such that wildcard values inserted into the address field, to enable deliver of data to a group of paging receivers, thereby allow fewer channels to handle multiple broadcast transmitters (i.e, a single channel can be used to broadcast a message to a plurality of receivers).

8. Claims **48-49, 52-53** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang** in view of **Chadwick** and further in view of **Weng** (US 4,856,003).

Regarding claim **48**, it is rejected for the same reason as set forth in claim 44 above. In addition, it would have been obvious to one skilled in the art at the time the invention was made to modify **Lorang** to split the formatted data into a first stream and a second stream, interleave bits from the first stream with bits from the second stream into separate segments, and merge the segments in producing the encoded data as disclosed by **Weng** (see col. 2, lines 27-47), for error correction (ECC or Forward-error-correction FEC) purpose.

Regarding claim **49**, the claim is interpreted and rejected for the same reason as set forth in claim 48 above. In addition, **Lorang** as modified would disclose encoding the formatted data is further arranged to divide the merged segments into predetermined

segments wherein in each segment corresponds to a predetermined number of symbols, such that the encoded data is produced (see **Weng**, col. col. 2, lines 27-47).

Regarding claims **52-53**, the claim is interpreted and rejected for the same reason as set forth in claims 48-49 above.

9. Claim **54** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang** in view of **Chadwick** and further in view of **Misaizu** (US **5,487,089**).

Regarding claim **54**, the claim is interpreted and rejected for the same reason as set forth in claim 50 above. In addition, since **Lorang** as modified would disclose the subcarrier signal generator is further arranged to modulate data corresponding to the output image utilizing quadrature phase shift keying (see **Chadwick**, Fig. 2 regarding DQPSK modulator 130), and since the QPSK modulator that modulates data correspond to symbol by symbol under the transmit clock timing is known in the art as disclosed by **Misaizu** (see col. 8, lines 1-5 and col. 9, lines 1-15), the claimed limitation is made obvious by **Chadwick** and **Misaizu**, so that the symbol can be modulated and transmitted in a frame according to transmitting timeslots.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Gaskill** (US 5,440,559), Portable wireless communication device.

**Hoff** (US 5,168,271), Paging and time keeping system with transmission of time slot identification used for synchronization.

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**Jokinen** (US 5,570,369), Reduction of power consumption in a mobile station.

**Charlier et al** (US 6,192,253), Wrist-carries radiotelephone.

**Murayama et al** (US 6,233,711), Turbo coding, decoding devices and Turbo coding, decoding methods.

11. **Any response to this action should be mailed to:**

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(571) 273-8300 (for **formal** communications intended for entry)

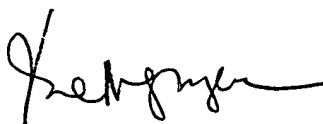
(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window,  
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner  
should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893,  
Monday-Thursday (9:00 AM - 5:00 PM).

Or to Matthew Anderson (Supervisor) whose telephone number is (571) 272-  
4177.

Duc M. Nguyen, P.E.



Aug 18, 2006